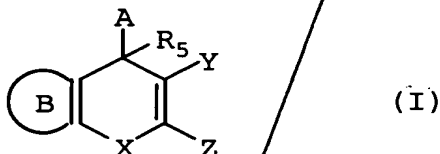


What Is Claimed Is:

5 *[Handwritten signature]* 1. A method of treating a disorder responsive to the induction of apoptosis in an animal suffering therefrom, comprising administering to a mammal in need of such treatment an effective amount of a compound of Formula I:



or a pharmaceutically acceptable salt or prodrug thereof, wherein:

10 X is O or S;

Y is CN, COR₇, CO₂R₇ or CONR_xR_y, wherein R₇, R_x and R_y are independently hydrogen, C₁₋₁₀ alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl; or

15 R_x and R_y are taken together with the nitrogen to form a heterocycle;

Z is NR₈R₉, NHCOR₈, N(COR₈)₂, N(COR₈)(COR₉), N=CHOR₈ or N=CHR₈, wherein R₈ and R₉ are independently H, C₁₋₄ alkyl or aryl, or R₈ and R₉ are combined together with the group attached to them to form a heterocycle;

20 R₅ is hydrogen or C₁₋₁₀ alkyl;

A is optionally substituted and is aryl, heteroaryl, saturated carbocyclic, partially saturated carbocyclic, saturated heterocyclic, partially saturated heterocyclic or arylalkyl; and

25 B is an optionally substituted aromatic ring or an optionally substituted heteroaromatic ring.

2. The method of claim 1, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl,

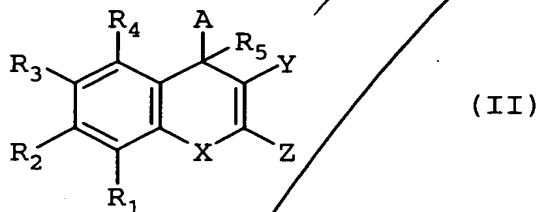
benzothienyl, quinolynyl, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

3. The method of claim 1, wherein B is optionally substituted and selected from the group consisting of benzo, naphtho, indolo, quino and isoquino.

4. The method of claim 1, wherein X is O.

5. The method of claim 1, wherein A is optionally substituted and selected from the group consisting of phenyl, naphthyl, quinolyl, isoquinolyl, pyridyl, thienyl, furyl, pyrrolyl, 2-phenylethyl and cyclohexyl.

6. The method of claim 1, wherein said compound has the Formula II:



or a pharmaceutically acceptable salt or prodrug thereof, wherein:

R₁-R₄ are independently hydrogen, halo, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, C₁₋₁₀ alkyl, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, nitro, amino, cyano, acylamido, hydroxy, thiol, acyloxy, azido, alkoxy, carboxy, methylenedioxy, carbonylamido or alkylthiol; or R₁ and R₂, or R₂ and R₃, or R₃ and R₄, taken together with the atoms to which they are attached form an aryl, heteroaryl, partially saturated carbocyclic or partially saturated heterocyclic group, wherein said group is optionally substituted.

7. The method of claim 6, wherein A is optionally substituted and selected from the group consisting of phenyl, naphthyl, quinolyl, isoquinolyl, pyridyl, thienyl, furyl, pyrrolyl, 2-phenylethyl and cyclohexyl.

5 8. The method of claim 6, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl, benzothienyl, quinolyl, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

10 9. The method of claim 6, wherein R₁ and R₂, or R₂ and R₃, or R₃ and R₄, are taken together to form a structure selected from the group consisting of -O-CH₂-O-, -(CH₂)₃-, -(CH₂)₄-, -O-CH₂CH₂-O-, -CH₂N(R)CH₂-, -CH₂CH₂N(R)CH₂-, -CH₂N(R)CH₂CH₂-, -N(R)-CH=CH-, -CH=CH-N(R)-, -O-CH=CH-, -CH=CH-O-, -S-CH=CH-, -CH=CH-S- and -N=CH-CH=N-, wherein R is hydrogen, C₁₋₁₀ alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

15 20 10. The method of claim 6, wherein R₁ and R₂, or R₂ and R₃, or R₃ and R₄, are taken together to form a structure selected from the group consisting of -CH=CH-CH=CH-, -N=CH-CH=CH-, -CH=N-CH=CH-, -CH=CH-N=CH- and -CH=CH-CH=N-.

25 11. The method of claim 6, wherein said compound is a chromene, naphthopyran, quinopyran, isoquinopyran or indolopyran.

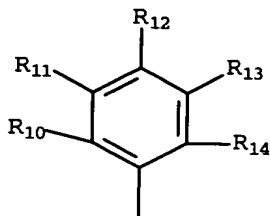
30 12. The method of claim 6, wherein X is O.

13. The method of claim 6, wherein X is O, Y is CN and Z is NH₂.

14. The method of claim 6, wherein R₅ is hydrogen.

15. The method of claim 6, wherein R₁-R₄ are independently hydrogen, halogen, hydroxy, C₁₋₁₀ alkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, amino, acylamido, acyloxy, alkoxy, methylenedioxy or alkylthiol.

16. The method of claim 6, wherein A is



and R₁₀-R₁₄ are independently hydrogen, halo, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, C₁₋₁₀ alkyl, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, nitro, amino, cyano, acylamido, hydroxy, thiol, acyloxy, azido, alkoxy, carboxy, methylenedioxy, carbonylamido or alkylthiol; or

R₁₀ and R₁₁, or R₁₁ and R₁₂, taken together with the atoms to which they are attached form an aryl, heteroaryl, optionally substituted carbocyclic or optionally substituted heterocyclic group, wherein said group is optionally substituted.

17. The method of claim 16, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans, and said compound is substituted in the 4-position of the pyran with an aryl or heteroaryl group which is phenyl, naphthyl, benzothienyl, quinolinyl, benzofuranyl or benzimidazolyl, then said

aryl or heteroaryl group is substituted at three or more positions by other than hydrogen.

5 *gch*
36
18. The method of claim 16, wherein R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , are taken together to form a structure selected from the group consisting of $-\text{OCH}_2\text{O}-$, $-(\text{CH}_2)_3-$, $-(\text{CH}_2)_4-$, $-\text{OCH}_2\text{CH}_2\text{O}-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2\text{CH}_2-$, $-\text{N}(\text{R})-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}(\text{R})-$, $-\text{O}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{O}-$, $-\text{S}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{S}-$ and $-\text{N}=\text{CH}-\text{CH}=\text{N}-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

15 19. The method of claim 16, wherein R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , are taken together to form a structure selected from the group consisting of $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$ and $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$.

20 20. The method of claim 16, wherein R_{10} and R_{11} , or R_{11} and R_{12} , are taken together to form a structure selected from the group consisting of $-\text{OCH}_2\text{O}-$, $-(\text{CH}_2)_3-$, $-(\text{CH}_2)_4-$, $-\text{OCH}_2\text{CH}_2\text{O}-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}(\text{R})-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}(\text{R})-$, $-\text{O}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{O}-$, $-\text{S}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{S}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$ and $-\text{N}=\text{CH}-\text{CH}=\text{N}-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

21. The method of claim 16, wherein R_1 and R_2 together form an optionally substituted ring, wherein said ring is selected from the group consisting of benzo, pyrido, furo, thieno, pyrrolo, imidazolo and pyrazo.

22 The method of claim 21, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans, and said compound is substituted in the 4-position of the pyran with an aryl or heteroaryl group which is phenyl, naphthyl, benzothienyl, quinoliny, benzofuranyl or benzimidazolyl then said aryl or heteroaryl group is substituted at three or more positions by other than hydrogen.

23. The method of claim 21, wherein said compound is naphthopyran, quinopyran, isoquinopyran or indolopyran.

24. The method of claim 21, wherein R_{10} and R_{11} , or R_{11} and R_{12} , are taken together to form a structure selected from the group consisting of $-\text{OCH}_2\text{O}-$, $-(\text{CH}_2)_3-$, $-(\text{CH}_2)_4-$, $-\text{OCH}_2\text{CH}_2\text{O}-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}(\text{R})-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}(\text{R})-$, $-\text{O}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{O}-$, $-\text{S}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{S}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$ and $-\text{N}=\text{CH}-\text{CH}=\text{N}-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

25. The method of claim 21, wherein R_3 , R_4 and R_5 are each hydrogen.

26. The method of claim 1, wherein said compound is selected from the group consisting of:

2-Amino-3-cyano-7-dimethylamino-4-(3-methoxy-4,5-methylene-
dioxyphe~~nyl~~)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-
4*H*-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(1-naphthyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-naphthyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4-methoxyphenyl)-
4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,6-dimethoxy-
phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-trifluoromethylphenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethylphenyl)-4*H*-
chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4-fluorophenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4,5-trimethoxyphenyl)-4*H*-
chromene;

20 2-Acetamido-3-cyano-7-dimethylamino-4-(3,4-methylenedioxy-
phenyl)-4*H*-chromene;

2-Di(ethoxycarbonyl)amino-3-cyano-7-dimethylamino-4-(3,4-
methylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-4,5-methylenedioxy-
phenyl)-4*H*-chromene;

25 2-Amino-3-cyano-7-diethylamino-4-(3-pyridyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-methyl-3-nitrophenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethylphenyl)-4*H*-
chromene;

30 3-Cyano-7-dimethylamino-4-(4,5-methylenedioxyphenyl)-2-
propionamido-4*H*-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-methoxyphenyl)-4*H*-chromene;

5 2-Amino-3-cyano-7-diethylamino-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-phenyl-4*H*-chromene;

2-Benzylidenamino-3-cyano-7-dimethylamino-4-phenyl-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-cyclohexyl-4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-3-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,4,5-trifluorophenyl)-4*H*-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(2,3,4-trifluorophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-3-nitrophenyl)-4*H*-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-ethylenedioxyphenyl)-4*H*-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-fluoro-3-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-pyridyl)-4*H*-chromene;

30 2-Amino-3-cyano-6,7-methylenedioxy-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

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2-Amino-3-cyano-7-ethylamino-4-(3-methoxy-4,5-methylenedioxy-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-trifluoromethyl-phenyl)-4*H*-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-4-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoromethylenedioxy-phenyl)-4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-furyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-thienyl)-4*H*-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-6-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-nitrophenyl)-4*H*-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3-phenoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-pyridyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-phenylethyl)-4*H*-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,3-difluoro-4-trifluoromethyl-phenyl)-4*H*-chromene;

30 2,7-Diamino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-pyridyl)-4*H*-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-(4-methoxyphenoxy)phenyl)-4*H*-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3,5-dichlorophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-quinolyl)-4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(2-quinolyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-phenylmethyl-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-carboxaldehydephenyl)-4*H*-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(4-bromo-3,5-dimethoxyphenyl)-4*H*-chromene;

2-Amino-7-acetamido-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-chromene;

2,7-Diamino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-chromene;

20 2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-6,7,8,9,10,11-hexahydro-4*H*-pyrido[3,2,1-ij]quino[5,6-b]pyran;

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-indolo[4,5-b]pyran;

25 2-Amino-3-cyano-7-ethylamino-6-methyl-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2,7-Diamino-3-cyano-8-methyl-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2-Amino-7-chloroacetamido-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-chromene;

30 2-Amino-3-cyano-4-(2-bromo-4,5-dimethoxyphenyl)-4*H*-indolo[4,5-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromophenyl)-4*H*-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3,5-dibromophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyanophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-methylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chlorophenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-8-methyl-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-nitrophenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-cyanophenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-difluorophenyl)-4H-chromene;

2-Amino-3-cyano-4-(3,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-bis(trifluoromethyl)phenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-5-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(4-bromo-3,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloromethylphenyl)-4H-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3-chloromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyano-4-fluorophenyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-nitro-4-fluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-methylenedioxyphenyl)-4H-chromene;

10 2-Amino-3-cyano-7-methoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethylthiophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluorophenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-difluoromethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-hydroxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethoxyphenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3-methylaminophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-dimethylaminophenyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3-iodo-4,5-dimethoxyphenyl)-4H-naptho[1,2-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3-indo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxyphenyl)-4H-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxyphenyl)-4H-naptho[1,2-b]pyran;

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2-Amino-3-cyano-7-dimethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-4,5-dimethoxyphenyl)-4H-chromene;

5 2-Chloroacetamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Acrylamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

10 3-Cyano-7-dimethylamino-2-succinimido-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

3-Cyano-7-dimethylamino-2-phenylureido-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

9-Acetamide-2-amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

15 2-Amino-3-cyano-7-dimethylamino-4-(5-bromo-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-3-pyridyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-2-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-bromo-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-naphtho[2,1-b]pyran;

25 2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-2-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-quinol[5,6-b]pyran;

30 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-isoquinol[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-quinol[8,7-b]pyran;

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2-Amino-3-cyano-7-ethoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8,9,10-tetrahydro-4H-naphtho[1,2-b]pyran;

5 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8-dimethyl-4H-chromene;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-quinol[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4-hydroxy-5-methoxyphenyl)-4H-naphtho[1,2-b]pyran;

10 2-Amino-6-chloro-3-cyano-4-(3-bromo-4-hydroxy-5-methoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-7-methoxy-4-(3,4,5-trimethoxyphenyl)-4H-chromene;

15 2-Amino-3-cyano-7-methoxy-4-(3,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-cyanophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-chlorophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-bromophenyl)-4H-chromene;

20 2-Amino-3-cyano-7-methoxy-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-methoxy-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-methylthio-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-chloro-3-pyridyl)-4H-chromene;

25 2-Amino-3-cyano-7-methoxy-4-(5-bromo-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methyl-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-chloro-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

30 2-Amino-3-cyano-7-bromo-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-bromo-4-(5-methyl-3-pyridyl)-4H-chromene;

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2-Amino-3-cyano-7-chloro-4-(5-methyl-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-ethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-
4H-chromene;
2-Amino-3-cyano-7-ethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;
and
2-Amino-3-cyano-7-hydroxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
chromene.

27. The method of claim 1, wherein said disorder is cancer.

28. The method of claim 27, wherein said cancer is selected from the group consisting of Hodgkin's disease, non-Hodgkin's lymphoma, acute and chronic lymphocytic leukemias, multiple myeloma, neuroblastoma, breast carcinoma, ovarian carcinoma, lung carcinoma, Wilms' tumor, cervical carcinoma, testicular carcinoma, soft-tissue sarcoma, chronic lymphocytic leukemia, primary macroglobulinemia, bladder carcinoma, chronic granulocytic leukemia, primary brain carcinoma, malignant melanoma, small-cell lung carcinoma, stomach carcinoma, colon carcinoma, malignant pancreatic insulinoma, malignant carcinoid carcinoma, malignant melanoma, choriocarcinoma, mycosis fungoides, head and neck carcinoma, osteogenic sarcoma, pancreatic carcinoma, acute granulocytic leukemia, hairy cell leukemia, neuroblastoma, rhabdomyosarcoma, Kaposi's sarcoma, genitourinary carcinoma, thyroid carcinoma, esophageal carcinoma, malignant hypercalcemia, cervical hyperplasia, renal cell carcinoma, endometrial carcinoma, polycythemia vera, essential thrombocytosis, adrenal cortex carcinoma, skin cancer and prostatic carcinoma.

29. The method of claim 27, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl, benzothienyl, quinolinyl, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

30. The method of claim 27, wherein said cancer is a drug resistant cancer.

5 31. The method of claim 30, with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl, benzothienyl, quinoliny, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

10 32. The method of claim 27 or 30, additionally comprising administering at least one known cancer chemotherapeutic agent, or a pharmaceutically acceptable salt of said agent.

15 33. The method of claim 32, wherein said known cancer therapeutic agent is selected from the group consisting of busulfan, cis-platin, mitomycin C, carboplatin, colchicine, vinblastine, paclitaxel, docetaxel, camptothecin, topotecan, doxorubicin, etoposide, 5-azacytidine, 5-fluorouracil, methotrexate, 5-fluoro-2'-deoxy-uridine, ara-C, hydroxyurea, thioguanine, melphalan, chlorambucil, cyclophosphamide, ifosfamide, vincristine, mitoguazone, epirubicin, aclarubicin, bleomycin, mitoxantrone, elliptinium, fludarabine, octreotide, retinoic acid, tamoxifen, Herceptin, Rituxan and alanosine.

20 34. The method of claim 27 or 30, additionally comprising treating with radiation-therapy.

25

35. The method of claim 27 or 30, wherein said compound is administered after surgical treatment for cancer.

36. The method of claim 1, wherein said disorder is an autoimmune disease.

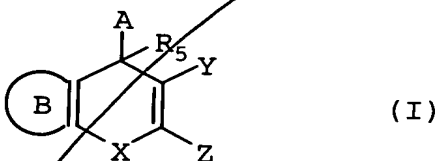
37. The method of claim 1, wherein said disorder is rheumatoid arthritis.

38. The method of claim 1, wherein said disorder is inflammation or inflammatory bowel disease.

39. The method of claim 1, wherein said disorder is psoriasis.

40. The method of claim 1, wherein said disorder is a skin disease.

41. A pharmaceutical composition comprising a pharmaceutically acceptable excipient or carrier and a compound of Formula I:



or a pharmaceutically acceptable salt or prodrug thereof, wherein:

X is O or S;

Y is CN, COR₇, CO₂R₇ or CONR_xR_y, wherein R₇, R_x and R_y are independently hydrogen, C₁₋₁₀ alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl; or R_x and R_y are taken together with the nitrogen to which they are attached to form a heterocycle;

Z is NR_8R_9 , NHCOR_8 , $\text{N}(\text{COR}_8)_2$, $\text{N}(\text{COR}_8)(\text{COR}_9)$, $\text{N}=\text{CHOR}_8$ or $\text{N}=\text{CHR}_8$, wherein R_8 and R_9 are independently H, C_{1-4} alkyl or aryl, or R_8 and R_9 are combined together with the group attached to them to form a heterocycle;

R_5 is hydrogen or C_{1-10} alkyl;

A is optionally substituted and is aryl, heteroaryl, saturated carbocyclic, partially saturated carbocyclic, saturated heterocyclic, partially saturated heterocyclic or arylalkyl; and

B is an optionally substituted aromatic ring or an optionally substituted heteroaromatic ring;

with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl, benzothienyl, quinoliny, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

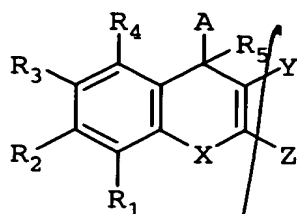
~~42. The pharmaceutical composition of claim 41, wherein B is optionally substituted and selected from the group consisting of benzo, naphtho, indolo, quino and isoquino and A is optionally substituted and selected from the group consisting of phenyl, naphthyl, pyridyl, quinolyl, isquinolyl, thienyl, furyl, pyrrolyl, 2-phenylethyl and cyclohexyl.~~

~~43. The pharmaceutical composition of claim 41, wherein X is O.~~

44. The pharmaceutical composition of claim 41, wherein X is O, Y is CN and Z is NH_2 .

45. The pharmaceutical composition of claim 41, wherein R_5 is hydrogen.

46. The pharmaceutical composition of claim 41, comprising a pharmaceutically acceptable excipient or carrier and a compound of Formula II:



(II)

or a pharmaceutically acceptable salt or prodrug thereof, wherein:

R_1 - R_4 are independently hydrogen, halo, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, C_{1-10} alkyl, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, nitro, amino, cyano, acylamido, hydroxy, thiol, acyloxy, azido, alkoxy, carboxy, methylenedioxy, carbonylamido or alkylthiol; or

R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , taken together with the atoms to which they are attached form an aryl, heteroaryl, partially saturated carbocyclic or partially saturated heterocyclic group, wherein said group is optionally substituted;

X is O or S;

Y is CN, COR_7 , CO_2R_7 or $CONR_xR_y$, wherein R_7 , R_x and R_y are independently hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl; or R_x and R_y

are taken together with the nitrogen to which they are attached to form a heterocycle;

Z is NR_8R_9 , $NHCOR_8$, $N(COR_8)_2$, $N(COR_8)(COR_9)$, $N=CHOR_8$ or $N=CHR_8$, wherein R_8 and R_9 are independently H, C_{1-4} alkyl or aryl, or R_8 and R_9 are combined together with the group attached to them to form a heterocycle;

R_5 is hydrogen or C_{1-10} alkyl; and

A is optionally substituted and is aryl, heteroaryl, saturated carbocyclic, partially saturated carbocyclic, saturated heterocyclic, partially saturated heterocyclic or arylalkyl;

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with the proviso that when said compound is selected from the group consisting of 4H-naphthopyrans, 4H-quinopyrans and 4H-isoquinopyrans and A is phenyl, naphthyl, thienyl, pyridyl, benzothienyl, quinolinyl, benzofuranyl or benzimidazolyl, then A is substituted at three or more positions by other than hydrogen.

47. The pharmaceutical composition of claim 46, wherein R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , are taken together to form a structure selected from the group consisting of $-OCH_2O-$, $-(CH_2)_3-$, $-(CH_2)_4-$, $-OCH_2CH_2O-$, $-CH_2N(R)CH_2-$, $-CH_2CH_2N(R)CH_2-$, $-CH_2N(R)CH_2CH_2-$, $-N(R)-CH=CH-$, $-CH=CH-N(R)-$, $-O-CH=CH-$, $-CH=CH-O-$, $-S-CH=CH-$, $-CH=CH-S-$ and $-N=CH-CH=N-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

48. The pharmaceutical composition of claim 46, wherein R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , are taken together to form a structure selected from the group consisting of $-CH=CH-CH=CH-$, $-N=CH-CH=CH-$, $-CH=N-CH=CH-$, $-CH=CH-N=CH-$ and $-CH=CH-CH=N-$.

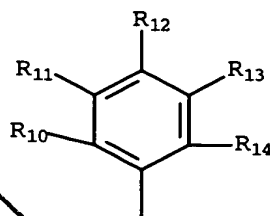
49. The pharmaceutical composition of claim 46, wherein X is O.

50. The pharmaceutical composition of claim 46, wherein X is O, Y is CN and Z is NH_2 .

51. The pharmaceutical composition of claim 46, wherein R_5 is hydrogen.

52. The pharmaceutical composition of claim 46, wherein R₁-R₄ are independently hydrogen, halogen, hydroxy, C₁₋₁₀ alkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, amino, acylamido, acyloxy, alkoxy, methylenedioxy or alkylthiol.

53. The pharmaceutical composition of claim 46 comprising said compound or a pharmaceutically acceptable salt or prodrug thereof, wherein A is



and R₁₀-R₁₄ are independently hydrogen, halo, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, C₁₋₁₀ alkyl, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl, aminoalkyl, carboxyalkyl, nitro, amino, cyano, acylamido, hydroxy, thiol, acyloxy, azido, alkoxy, carboxy, methylenedioxy, carbonylamido or alkylthiol; or

R₁₀ and R₁₁, or R₁₁ and R₁₂, taken together with the atoms to which they are attached form an aryl, heteroaryl, optionally substituted carbocyclic or optionally substituted heterocyclic group, wherein said group is optionally substituted.

54. The pharmaceutical composition of claim 53, wherein R₁ and R₂, or R₂ and R₃, or R₃ and R₄, are taken together to form a structure selected from the group consisting of -OCH₂O-, -(CH₂)₃-, -(CH₂)₄-, -OCH₂CH₂O-, -CH₂N(R)CH₂-, -CH₂CH₂N(R)CH₂-, -CH₂N(R)CH₂CH₂-, -N(R)-CH=CH-, -CH=CH-N(R)-, -O-CH=CH-, -CH=CH-O-, -S-CH=CH-, -CH=CH-S- and -N=CH-CH=N-, wherein R is hydrogen, C₁₋₁₀ alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a

heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

5 55. The pharmaceutical composition of claim 53, wherein R_1 and R_2 , or R_2 and R_3 , or R_3 and R_4 , are taken together to form a structure selected from the group consisting of $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$ and $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$.

10 56. The pharmaceutical composition of claim 53, wherein R_{10} and R_{11} , or R_{11} and R_{12} , are taken together to form a structure selected from the group consisting of $-\text{OCH}_2\text{O}-$, $-(\text{CH}_2)_3-$, $-(\text{CH}_2)_4-$, $-\text{OCH}_2\text{CH}_2\text{O}-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}(\text{R})-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}(\text{R})-$, $-\text{O}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{O}-$, $-\text{S}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{S}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$ and $-\text{N}=\text{CH}-\text{CH}=\text{N}-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl.

15 20

25 57. The pharmaceutical composition of claim 53, wherein R_1 and R_2 together form an optionally substituted ring, wherein said ring is selected from the group consisting of benzo, pyrido, furo, thieno, pyrrolo, imidazo and pyrazo.

30 58. The pharmaceutical composition of claim 57, wherein said ring is selected from the group consisting of benzo, pyrido and pyrrolo.

59. The pharmaceutical composition of claim 57, wherein R_{10} and R_{11} , or R_{11} and R_{12} , are taken together to form a structure selected from the

group consisting of $-\text{OCH}_2\text{O}-$, $-(\text{CH}_2)_3-$, $-(\text{CH}_2)_4-$, $-\text{OCH}_2\text{CH}_2\text{O}-$,
 $-\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{N}(\text{R})\text{CH}_2-$, $-\text{CH}_2\text{N}(\text{R})\text{CH}_2\text{CH}_2-$,
 $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$, $-\text{N}(\text{R})-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}(\text{R})-$, $-\text{O}-\text{CH}=\text{CH}-$,
 $-\text{CH}=\text{CH}-\text{O}-$, $-\text{S}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{S}-$, $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$,
5 $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$, $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$ and
 $-\text{N}=\text{CH}-\text{CH}=\text{N}-$, wherein R is hydrogen, C_{1-10} alkyl, haloalkyl, aryl, fused
aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl,
arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl,
heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or
10 aminoalkyl.

60. The pharmaceutical composition of claim 57, wherein R_3 , R_4
and R_5 are each hydrogen.

61. The pharmaceutical composition of claim 46, wherein said
compound is selected from the group consisting of:

2-Amino-3-cyano-7-dimethylamino-4-(3-methoxy-4,5-methylene-
dioxyphe~~n~~yl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-
4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(1-naphthyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-naphthyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4-methoxyphenyl)-
4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,6-dimethoxy-
phenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-trifluoromethylphenyl)-4H-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethylphenyl)-4H-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4-fluorophenyl)-4H-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4,5-trimethoxyphenyl)-4H-chromene;

2-Acetamido-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-4H-chromene;

5 2-Di(ethoxycarbonyl)amino-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-diethylamino-4-(3-pyridyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(4-methyl-3-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethylphenyl)-4H-chromene;

15 3-Cyano-7-dimethylamino-4-(4,5-methylenedioxyphenyl)-2-propionamido-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-methoxyphenyl)-4H-chromene;

20 2-Amino-3-cyano-7-diethylamino-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-phenyl-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-cyclohexyl-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-3-trifluoromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,4,5-trifluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,3,4-trifluorophenyl)-4H-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-nitrophenyl)-4H-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-3-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-ethylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethoxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-fluoro-3-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-pyridyl)-4*H*-chromene;

2-Amino-3-cyano-6,7-methylenedioxy-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-ethylamino-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-4-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoromethylenedioxyphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoro-5-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-furyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-thienyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-trifluoromethylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-6-nitrophenyl)-4*H*-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-phenoxyphenyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(2-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-phenylethyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-nitrophenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-5-trifluoromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,3-difluoro-4-trifluoromethylphenyl)-4H-chromene;

2,7-Diamino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(4-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-(4-methoxyphenoxy)phenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3,5-dichlorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-trifluoromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-quinolyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(2-quinolyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-phenylmethyl-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-carboxaldehydephenyl)-4H-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(4-bromo-3,5-dimethoxyphenyl)-4H-chromene;

2-Amino-7-acetamido-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

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2,7-Diamino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-ethylamino-6-methyl-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

5 2,7-Diamino-3-cyano-8-methyl-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-7-chloroacetamido-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromophenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(3,5-dibromophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyanophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-methylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chlorophenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-difluorophenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3,5-bis(trifluoromethyl)phenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-5-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloromethylphenyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3-chloromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyano-4-fluorophenyl)-4H-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(3-nitro-4-fluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethylthiophenyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-fluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-difluoromethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-hydroxyphenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-methylaminophenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-dimethylaminophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-iodo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxyphenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-4,5-dimethoxyphenyl)-4H-chromene;

25 2-Chloroacetamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Acrylamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

3-Cyano-7-dimethylamino-2-succinimido-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

30 3-Cyano-7-dimethylamino-2-phenylureido-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(5-bromo-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-3-pyridyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-2-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-bromo-4,5-methylenedioxyphenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-2-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-ethoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8-dimethyl-4H-chromene;

15 2-Amino-3-cyano-7-methoxy-4-(3,4,5-trimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-cyanophenyl)-4H-chromene;

20 2-Amino-3-cyano-7-methoxy-4-(3-chlorophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-bromophenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-methoxy-3-pyridyl)-4H-chromene;

25 2-Amino-3-cyano-7-methoxy-4-(5-methylthio-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-chloro-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(5-bromo-3-pyridyl)-4H-chromene;

30 2-Amino-3-cyano-7-methyl-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-chloro-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

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2-Amino-3-cyano-7-bromo-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-bromo-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-chloro-4-(5-methyl-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-ethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-ethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;
and

2-Amino-3-cyano-7-hydroxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene.

62. The pharmaceutical composition of claim 57, wherein said compound is selected from the group consisting of:

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-6,7,8,9,10,11-hexahydro-4H-pyrido[3,2,1-ij]quino[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(4-bromo-3,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3-iodo-4,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-naphtho[2,1-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-quino[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
isoquino[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
quino[8,7-b]pyran;

5 2-Amino-3-cyano-4-(3-bromo-4-hydroxy-5-methoxyphenyl)-4H-
naphtho[1,2-b]pyran;

2-Amino-6-chloro-3-cyano-4-(3-bromo-4-hydroxy-5-methoxyphenyl)-
4H-naphtho[1,2-b]pyran;

10 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8,9,10-
tetrahydro-4H-naphtho[1,2-b]pyran; and

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-quino[5,6-b]pyran.

63. The pharmaceutical composition of claim 57, wherein said
compound is selected from the group consisting of:

15 2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-
indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(2-bromo-4,5-dimethoxyphenyl)-4H-
indolo[4,5-b]pyran;

20 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-8-methyl-4H-
indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-nitrophenyl)-4H-indolo[4,5-b]pyran;

25 2-Amino-3-cyano-4-(3-cyanophenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

and

9-Acetamide-2-amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
indolo[4,5-b]pyran.

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64. The pharmaceutical composition of claim 41, further comprising at least one known cancer chemotherapeutic agent, or a pharmaceutically acceptable salt of said agent.

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65. The pharmaceutical composition of claim 64, wherein said known cancer chemotherapeutic agent is selected from the group consisting of busulfan, cis-platin, mitomycin C, carboplatin, colchicine, vinblastine, paclitaxel, docetaxel, camptothecin, topotecan, doxorubicin, etoposide, 10 5-azacytidine, 5-fluorouracil, methotrexate, 5-fluoro-2'-deoxy-uridine, ara-C, hydroxyurea, thioguanine, melphalan, chlorambucil, cyclophosphamide, ifosfamide, vincristine, mitoguazone, epirubicin, aclarubicin, bleomycin, mitoxantrone, elliptinium, fludarabine, octreotide, retinoic acid, tamoxifen, Herceptin, Rituxan and alanosine.

15 66. The pharmaceutical composition of claim 41, wherein said excipient or carrier is selected from the group consisting of saccharides, starch pastes, gelatin, tragacanth, cellulose preparations, calcium phosphates and polyvinyl pyrrolidone.

20 67. The pharmaceutical composition of claim 66, wherein said excipient or carrier is a saccharide selected from the group consisting of lactose, sucrose, manitol and sorbitol.

25 68. The pharmaceutical composition of claim 41, wherein said excipient or carrier is a lipophilic solvent.

30 69. The pharmaceutical composition of claim 68, wherein said lipophilic solvent is selected from the group consisting of fatty oils, fatty acid esters, polyethylene glycols and paraffin hydrocarbons.

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70. The pharmaceutical composition of claim 69, wherein said lipophilic solvent is selected from the group consisting of sesame oil, ethyl oleate, triglycerides, polyethylene glycol-400, cremophor and cyclodextrins.

5 71. The pharmaceutical composition of claim 41, wherein said excipient or carrier is selected from the group consisting of vegetable oils, mineral oils, white petrolatum, branched chain fats, branched chain oils, animal fats and high molecular weight alcohol (greater than C₁₂).

10 72. The pharmaceutical composition of claim 41, wherein said excipient or carrier is a saline solution.

73. A chromene, selected from the group consisting of:

15 2-Amino-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-naphthyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4,5-trimethoxyphenyl)-4H-chromene;

20 2-Acetamido-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-4H-chromene;

2-Di(ethoxycarbonyl)amino-3-cyano-7-dimethylamino-4-(3,4-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-4,5-methylenedioxyphenyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(4-methyl-3-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethylphenyl)-4H-chromene;

30 3-Cyano-7-dimethylamino-4-(4,5-methylenedioxyphenyl)-2-propionamido-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-diethylamino-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-phenyl-4H-chromene;

2-Benzylidenamino-3-cyano-7-dimethylamino-4-phenyl-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-cyclohexyl-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-3-trifluoromethylphenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(2,4,5-trifluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,3,4-trifluorophenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-3-nitrophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-nitrophenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-ethylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-dimethoxyphenyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(4-fluoro-3-trifluoromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-pyridyl)-4H-chromene;

2-Amino-3-cyano-6,7-methylenedioxy-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

30 2-Amino-3-cyano-7-ethylamino-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(2-fluoro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-4-trifluoromethyl-phenyl)-4*H*-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoromethylenedioxy-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,4-difluoro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-furyl)-4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(5-nitro-2-thienyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-trifluoromethyl-phenyl)-4*H*-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-6-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-chloro-5-nitrophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-phenoxyphenyl)-4*H*-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(2-pyridyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-phenylethyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-nitrophenyl)-4*H*-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-5-trifluoromethyl-phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2,3-difluoro-4-trifluoromethyl-phenyl)-4*H*-chromene;

2,7-Diamino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4*H*-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(4-pyridyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-dimethoxyphenyl)-4*H*-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3-(4-methoxyphenoxy)phenyl)-
4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-dichlorophenyl)-4*H*-
chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-fluoro-6-trifluoromethyl-
phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-quinolyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-quinolyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-phenylmethyl-4*H*-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(4-carboxaldehydephenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-bromo-3,5-dimethoxy-
phenyl)-4*H*-chromene;

15 2-Amino-7-acetamido-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-
chromene;

2,7-Diamino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-ethylamino-6-methyl-4-(3-methoxy-4,5-
methylenedioxyphenyl)-4*H*-chromene;

20 2,7-Diamino-3-cyano-8-methyl-4-(3-methoxy-4,5-methylenedioxy-
phenyl)-4*H*-chromene;

2-Amino-7-chloroacetamido-3-cyano-4-(3-bromo-4,5-dimethoxy-
phenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-bromophenyl)-4*H*-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3,5-dibromophenyl)-4*H*-
chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyanophenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-methylphenyl)-4*H*-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-chlorophenyl)-4*H*-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(3-methoxyphenyl)-4*H*-
chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(3,5-difluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3,5-bis(trifluoromethyl)-phenyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-5-methoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloromethylphenyl)-4H-chromene;

10 2-Amino-3-cyano-7-dimethylamino-4-(3-chloromethylphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-cyano-4-fluorophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-nitro-4-fluorophenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(3-bromo-4,5-methylenedioxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethylthiophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-difluoromethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-hydroxyphenyl)-4H-chromene;

25 2-Amino-3-cyano-7-dimethylamino-4-(3-trifluoromethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-methylaminophenyl)-4H-chromene;

30 2-Amino-3-cyano-7-dimethylamino-4-(3-dimethylaminophenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(3-iodo-4,5-dimethoxyphenyl)-4H-chromene;

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2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxy-phenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;

5 2-Amino-3-cyano-7-dimethylamino-4-(3-chloro-4,5-dimethoxy-phenyl)-4H-chromene;

2-Chloroacetamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

10 2-Acrylamido-3-cyano-7-dimethylamino-4-(3-bromo-4,5-dimethoxy-phenyl)-4H-chromene;

3-Cyano-7-dimethylamino-2-succinimido-4-(3-bromo-4,5-dimethoxy-phenyl)-4H-chromene;

3-Cyano-7-dimethylamino-2-phenylureido-4-(3-bromo-4,5-dimethoxy-phenyl)-4H-chromene;

15 2-Amino-3-cyano-7-dimethylamino-4-(5-bromo-3-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-3-pyridyl)-4H-chromene;

20 2-Amino-3-cyano-7-dimethylamino-4-(6-methyl-2-pyridyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(2-bromo-4,5-methylenedioxy-phenyl)-4H-chromene;

2-Amino-3-cyano-7-dimethylamino-4-(4-chloro-2-nitrophenyl)-4H-chromene;

25 2-Amino-3-cyano-7-ethoxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8-dimethyl-4H-chromene;

30 2-Amino-3-cyano-7-methoxy-4-(3,4,5-trimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3,5-dimethoxyphenyl)-4H-chromene;

2-Amino-3-cyano-7-methoxy-4-(3-methoxyphenyl)-4H-chromene;

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2-Amino-3-cyano-7-methoxy-4-(3-cyanophenyl)-4H-chromene;
2-Amino-3-cyano-7-methoxy-4-(3-chlorophenyl)-4H-chromene;
2-Amino-3-cyano-7-methoxy-4-(3-nitrophenyl)-4H-chromene;
2-Amino-3-cyano-7-methoxy-4-(3-bromophenyl)-4H-chromene;
5 2-Amino-3-cyano-7-methoxy-4-(5-methyl-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-methoxy-4-(5-methoxy-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-methoxy-4-(5-methylthio-3-pyridyl)-4H-
chromene;
2-Amino-3-cyano-7-methoxy-4-(5-chloro-3-pyridyl)-4H-chromene;
10 2-Amino-3-cyano-7-methoxy-4-(5-bromo-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-methyl-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
chromene;
2-Amino-3-cyano-7-chloro-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
chromene;
15 2-Amino-3-cyano-7-bromo-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
chromene;
2-Amino-3-cyano-7-bromo-4-(5-methyl-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-chloro-4-(5-methyl-3-pyridyl)-4H-chromene;
2-Amino-3-cyano-7-ethylamino-4-(3-bromo-4,5-dimethoxyphenyl)-
20 4H-chromene;
2-Amino-3-cyano-7-ethylamino-4-(5-methyl-3-pyridyl)-4H-chromene;
and
2-Amino-3-cyano-7-hydroxy-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
chromene.

25 74. A naphthopyran, quinopyran or isoquinopyran, selected from
the group consisting of:

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-
6,7,8,9,10,11-hexahydro-4H-pyrido[3,2,1-ij]quino[5,6-b]pyran;
30 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-
naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(4-bromo-3,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-naphtho[1,2-b]pyran;

5 2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-7-dimethylamino-4-(3-iodo-4,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

10 2-Amino-3-cyano-7-dimethylamino-4-(4-acetoxy-3,5-dimethoxyphenyl)-4H-naphtho[1,2-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-naphtho[2,1-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-quinol[5,6-b]pyran;

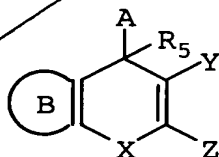
15 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-isoquinol[5,6-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-quinol[8,7-b]pyran;

20 2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-7,8,9,10-tetrahydro-4H-naphtho[1,2-b]pyran; and

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-quinol[5,6-b]pyran.

75. An indolopyran of Formula I:



(I)

or a pharmaceutically acceptable salt or prodrug thereof, wherein:

B is optionally substituted indolo;

X is O;

Y is CN, COR₇, CO₂R₇ or CONR_xR_y, wherein R₇, R_x and R_y are independently hydrogen, C₁₋₁₀ alkyl, haloalkyl, aryl, fused aryl, carbocyclic, a heterocyclic group, a heteroaryl group, alkenyl, alkynyl, arylalkyl, arylalkenyl, arylalkynyl, heteroarylalkyl, heteroarylalkenyl, heteroarylalkynyl, carbocycloalkyl, heterocycloalkyl, hydroxyalkyl or aminoalkyl; or R_x and R_y are taken together with the nitrogen to which they are attached to form a heterocycle;

Z is NR₈R₉, NHCOR₈, N(COR₈)₂, N(COR₈)(COR₉), N=CHOR₈ or N=CHR₈, wherein R₈ and R₉ are independently H, C₁₋₄ alkyl or aryl, or R₈ and R₉ are combined together with the group attached to them to form a heterocycle;

R₅ is hydrogen or C₁₋₁₀ alkyl; and

A is optionally substituted and is aryl, heteroaryl, saturated carbocyclic, partially saturated carbocyclic, saturated heterocyclic, partially saturated heterocyclic or arylalkyl.

76. The compound of claim 75, wherein said compound is an optionally substituted 4H-indolo[4,5-b]pyran.

77. The compound of claim 76, wherein A is optionally substituted phenyl.

78. The compound of claim 77, wherein said compound is selected from the group consisting of:

2-Amino-3-cyano-4-(3-methoxy-4,5-methylenedioxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(2-bromo-4,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-8-methyl-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3,4,5-trimethoxyphenyl)-4H-indolo[4,5-b]pyran;

2-Amino-3-cyano-4-(3-nitrophenyl)-4*H*-indolo[4,5-*b*]pyran;

2-Amino-3-cyano-4-(3-cyanophenyl)-4*H*-indolo[4,5-*b*]pyran;

2-Amino-3-cyano-4-(3,5-dimethoxyphenyl)-4*H*-indolo[4,5-*b*]pyran;

and

5 9-Acetamide-2-amino-3-cyano-4-(3-bromo-4,5-dimethoxyphenyl)-4*H*-indolo[4,5-*b*]pyran.

add
B17

add
C8

add
D5

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